

ABSTRACT OF THE DISCLOSURE

An optical monitoring apparatus based on the scanning of the gain profile of erbium-doped fiber amplifiers (EDFA) and applied in a wavelength division multiplexing network has been proposed and experimentally demonstrated. The EDFA with an injected saturated tone can provide variable gain or loss profile by controlling the pump power. The components used in the present optical monitoring apparatus for use in a wavelength division multiplexing network are easily available and cost-effective, valuable for monitoring frequency and power of a WDM optical communication system, and capable of greatly enhancing resolution of monitoring frequency spectrum for the optical fiber network system.